



Louisville Metro Air Pollution Control District  
701 West Ormsby Ave  
Louisville, Kentucky 40203-3137



## **Federally Enforceable District Origin Operating Permit (FEDOOP) STAR Exempt**

Permit No.: O-1312-21-F

Plant ID: 1312

Effective Date: 11/23/2021

Expiration Date: 11/30/2026

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

<b>Source:</b>	Innovative Crushing & Aggregate, Inc.	<b>Owner:</b>	Innovative Crushing & Aggregate, Inc.
	2412 Millers Lane		2412 Millers Lane
	Louisville, Kentucky 40216		Louisville, Kentucky 40216

The applicable procedures of District Regulation 2.17 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than twelve months and no later than ninety days prior to the expiration date.

Emission limitations to qualify for non-major status:

Pollutant:	CO	NO <sub>x</sub>	PM <sub>10</sub>
Tons/year:	<25	<25	<25

Application No.: See **Application and Related Documents** table.

Public Notice Date: 10/21/2021

Permit writer: Martin J. Hazelett

DocuSigned by:



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Air Pollution Control Officer  
11/23/2021

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**Permit Revisions and Changes**

<b>Permit No.</b>	<b>Public Notice Date</b>	<b>Issue Date</b>	<b>Change Type</b>	<b>Description/Scope</b>
39-04-F	12/4/2005	3/31/2006	Initial	Initial Permit Issuance
O-1312-16-F	06/04/2016	07/11/2016	Renewal	Permit renewal and incorporation of construction permits and STAR Exempt Request
O-1312-21-F	10/21/2021	11/23/2021	Renewal	Permit Renewal and removal of greenhouse gas emission limits as they are not applicable.

**Construction Permit Summary**

<b>Permit No.</b>	<b>Issue Date</b>	<b>Description</b>
C-1312-1001-16-F	06/03/2016	Installation of (1) 3-deck screen, electric motor

**Application and Related Documents**

<b>Document Number</b>	<b>Date</b>	<b>Description</b>
OB195511	03/02/2021	Renewal Application reminder
OB210890	04/13/2021	Follow up on FEDOOP expiration
OB210930	04/14/2021	Renewal application forms expected
OB216797	05/03/2021	Operating permit renewal application
OB228462	06/16/2021	Request for information regarding permit o-1312-16-F reporting requirements
OB235418	07/07/2021	Response to request for information regarding permit o-1312-16-F reporting requirements (equipment location)
OB235415	07/08/2021	Information regarding permit o-1312-16-F reporting requirements (truck sheets)
OB262552	09/27/2021	Company comments/questions on pre-draft permit
OB265300	10/07/2021	District response to company comments/questions

## Abbreviations and Acronyms

AP-42	- AP-42, <i>Compilation of Air Pollutant Emission Factors, published by U.S.EPA</i>
APCD	- Louisville Metro Air Pollution Control District
BAC	- Benchmark Ambient Concentration
Btu	- British thermal unit
CEMS	- Continuous Emission Monitoring System
CFR	- Code of Federal Regulations
CO	- Carbon monoxide
District	- Louisville Metro Air Pollution Control District
EA	- Environmental Acceptability
gal	- U.S. fluid gallons
GHG	- Greenhouse Gas
HAP	- Hazardous Air Pollutant
HCl	- Hydrogen chloride
Hg	- Mercury
hr	- Hour
in.	- Inches
lbs	- Pounds
l	- Liter
LMAPCD	- Louisville Metro Air Pollution Control District
mmHg	- Millimeters of mercury column height
MM	- Million
NAICS	- North American Industry Classification System
NO <sub>x</sub>	- Nitrogen oxides
PM	- Particulate Matter
PM <sub>10</sub>	- Particulate Matter less than 10 microns
PM <sub>2.5</sub>	- Particulate Matter less than 2.5 microns
ppm	- parts per million
PSD	- Prevention of Significant Deterioration
psia	- Pounds per square inch absolute
QA	- Quality Assurance
SIC	- Standard Industrial Classification
SIP	- State Implementation Plan
SO <sub>2</sub>	- Sulfur dioxide
STAR	- Strategic Toxic Air Reduction
TAC	- Toxic Air Contaminant
UTM	- Universal Transverse Mercator
VOC	- Volatile Organic Compound
w.c.	- Water column
year	- Any period of twelve consecutive months, unless "calendar year" is specified
yr	- Year, or any 12 consecutive-month period, as determined by context

## **Preamble**

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of annual fees is not made. The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

## **General Conditions**

- G1. The owner or operator shall comply with all General Conditions herein and all terms and conditions in the referenced process/process equipment list.
- G2. All terms and conditions in this FEDOOP are enforceable by EPA, except those terms and conditions specified as District-only enforceable, and those which are not required pursuant to the Clean Air Act Amendments of 1990 (CAAA) or any of the Act's applicable requirements.
- G3. All application forms, reports, compliance certifications, and other relevant information submitted to the District shall be certified by a responsible official. If a change in the responsible official (RO) occurs during the term of this permit, or if an RO is added, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of such change or addition.
- G4. The owner or operator shall submit an annual compliance certification, signed by the responsible official, to the District, on or before April 15 of the year following the year for which the certification applies. This certification shall include completion of District Form 9440-O.
- G5. Periodic testing, instrumental monitoring, or non-instrumental monitoring, which may include record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstrating continuing compliance with the terms and conditions of this permit.
- G6. The owner or operator shall retain all records required by the District or any applicable requirement, including all required monitoring data and supporting information, for a period of five years from the date of the monitoring, sampling, measurement, report, or application, unless a longer time period for record retention is required by the District or an applicable requirement. Records shall be retrievable within a reasonable time and made available to the District, Kentucky Division for Air Quality, or the EPA upon request.
- G7. The owner or operator shall provide written notification to the District, and receive approval, prior to making any changes to existing equipment or processes that would result in emissions of any regulated pollutant in excess of the allowable emissions specified in this permit.
- G8. This permit may be reissued, revised, reopened, or revoked pursuant to District Regulation 2.17. Repeated violations of permit conditions are sufficient cause for revocation of this permit. The filing of a request by the owner or operator for any reissuance, revision, revocation,

termination, or a notification of planned changes in equipment or processes, or anticipated noncompliance shall not alter any permit requirement.

- G9. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed either 5 tons per year, or such lesser quantity as the EPA has established by rule, of any one Hazardous Air Pollutant (HAP) or 12.5 tons per year of all HAPs combined. Fugitive HAP emissions shall be included in this limit. HAPs are listed in section 112(b) of the CAAA and as amended in 40 CFR 63, Subpart C.
- G10. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed 25 tons per year of any regulated pollutant, including particulate matter, PM<sub>10</sub>, PM<sub>2.5</sub>, sulfur dioxide, carbon monoxide, nitrogen oxides, lead, hydrogen sulfide, gaseous fluorides, total fluorides, or Volatile Organic Compounds (VOC); any pollutant subject to any standard in District Regulation 7.02; or any substance listed in sections 112(r), 602(a) and 602(b) of the CAAA. Fugitive emissions shall be included in these limits for source categories listed in District Regulation 2.16.
- G11. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G12. Unless specified elsewhere in this permit, the owner or operator shall submit semi-annual reports demonstrating compliance with the emission limitations specified. The report shall contain monthly and consecutive 12-month totals for each pollutant that has a federally enforceable limitation on the potential to emit. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement or a declaration that there were no such deviations. All compliance reports shall include the following per Regulation 2.17, section 3.5.
- A certification statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete", and
  - The signature and title of a responsible official of the company.

The semi-annual compliance reports are due on or before the following dates of each calendar year:

<b><u>Reporting Period</u></b>	<b><u>Report Due Date</u></b>
January 1 - June 30	August 29
July 1 - December 31	March 1 of the following year

- G13. The owner or operator shall comply with all applicable requirements of the following federally enforceable District Regulations:

<b>Regulation</b>	<b>Title</b>
1.01	General Application of Regulations and Standards
1.02	Definitions
1.03	Abbreviations and Acronyms

<b>Regulation</b>	<b>Title</b>
1.04	Performance Tests
1.05	Compliance With Emissions Standards and Maintenance Requirements
1.06	Source Self-Monitoring, Emission Inventory Development and Reporting
1.07	Excess Emissions During Startups, Shutdowns, and Upset Conditions
1.08	Administrative Procedures
1.09	Prohibition of Air Pollution
1.10	Circumvention
1.11	Control of Open Burning
1.14	Control of Fugitive Particulate Emissions
1.18	Rule Effectiveness
1.19	Administrative Hearings
2.01	General Application (Permit Requirements)
2.02	Air Pollution Regulation Requirements and Exemptions
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements
2.06	Permit Requirements – Other Sources
2.09	Causes for Permit Modification, Revocation, or Suspension
2.10	Stack Height Considerations
2.11	Air Quality Model Usage
2.17	Federally Enforceable District Origin Operating Permits
3.01	Ambient Air Quality Standards
4.01	General Provisions for Emergency Episodes
4.02	Episode Criteria
4.03	General Abatement Requirements
4.04	Particulate and Sulfur Dioxide Reduction Requirements
4.05	Hydrocarbon and Nitrogen Oxides Reduction Requirements
4.06	Carbon Monoxide Reduction Requirements
4.07	Episode Reporting Requirements
6.01	General Provisions (Existing Affected Facilities)
6.02	Emission Monitoring for Existing Sources
7.01	General Provisions (New Affected Facilities)

- G14. The owner or operator shall comply with all applicable requirements of the following District-only enforceable regulations:

<b>Regulation</b>	<b>Title</b>
1.12	Control of Nuisances

<b>Regulation</b>	<b>Title</b>
1.13	Control of Objectionable Odors
2.08	Emission Fee, Permit Fees and Permit Renewal Procedures
5.00	Definitions
5.01	General Provisions
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants
5.14	Hazardous Air Pollutants and Source Categories
5.15	Chemical Accident Prevention Provisions
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant
5.21	Environmental Acceptability for Toxic Air Contaminants
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant
5.23	Categories of Toxic Air Contaminants
7.02	Adoption and Incorporation by Reference of Federal New Source Performance Standards

- G15. The owner or operator shall submit emission inventory reports, as required by Regulation 1.06, if so notified by the District.
- G16. The owner or operator shall submit timely reports of abnormal conditions or operational changes that may cause excess emissions, as required by Regulation 1.07.
- G17. Applications, reports, test data, monitoring data, compliance certifications, and any other document required by this permit shall be submitted to:

***Air Pollution Control District  
701 W. Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137***



**Plantwide Requirements****Facility Description**

Innovative Crushing & Aggregate, Inc. specializes in crushing and recycling of rock and construction debris. Aggregate and construction debris are brought onsite, sorted and processed, then sold for reuse in various industrial or building applications.

**Applicable Regulations**

<b>FEDERALLY ENFORCEABLE REGULATIONS</b>		
<b>Regulation</b>	<b>Title</b>	<b>Applicable Sections</b>
1.14	Control of Fugitive Particulate Emissions	All
2.17	Federally Enforceable District Origin Operating Permits	5.1, 5.2

<b>DISTRICT ONLY ENFORCEABLE REGULATIONS</b>		
<b>Regulation</b>	<b>Title</b>	<b>Applicable Sections</b>
5.00	Definitions	1, 2

### Plantwide Specific Conditions

#### S1. Standards

[Regulation 2.17, section 5.1]

##### a. CO

- i. The owner or operator shall not allow the plantwide emissions of the pollutant CO to equal or exceed twenty-five (25) tons per twelve (12) consecutive month period.<sup>1</sup> [Regulation. 2.17, Section 5.1] [Regulation 5.00]

##### b. NOx

- i. The owner or operator shall not allow the plantwide emissions of the pollutant NOx to equal or exceed twenty-five (25) tons per twelve (12) consecutive month period.<sup>1</sup> [Regulation. 2.17, Section 5.1] [Regulation 5.00]
- ii. The owner or operator shall not allow the diesel engines (associated with Crusher 1, Crusher 3, Crusher 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12) to be located in one place onsite for more than 12 consecutive months.<sup>2</sup> [Regulation 2.17, section 5.1]

##### c. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

- i. The owner or operator shall not allow the plantwide emissions of the pollutant PM<sub>10</sub> to equal or exceed twenty-five (25) tons per twelve (12) consecutive month period. [Regulation. 2.17, Section 5.1] [Regulation 5.00]
- ii. The owner or operator shall not allow the plantwide emissions of the pollutant PM to equal or exceed a total of twenty-five (25) tons per twelve (12) consecutive month period. [Regulation 5.00]
- iii. The owner or operator shall not allow the plantwide emissions of the pollutant PM<sub>2.5</sub> to equal or exceed a total of twenty-five (25) tons per twelve (12) consecutive month period. [Regulation 5.00]

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<sup>1</sup> Potential to Emit calculations for this facility categorize this site as potentially Major source for CO, NOx and PM<sub>10</sub>. Innovative Crushing and Aggregate, Inc. is currently permitted to operate as a Synthetic Minor Source (FEDOOP) and is STAR-exempt.

<sup>2</sup> If the engines are located on site at one location for 12 consecutive months at any one time then they are considered stationary and not mobile and the emissions for NOx, CO, SO<sub>2</sub>, PM<sub>10</sub>, and VOC count toward the source's potential to emit for major source determination.

- iv. The owner or operator shall not allow any materials to be handled, transported or stored; or access roads to and from the plant site, roads on the plant site property and the on-site work areas of the plant site, to be used without taking reasonable precautions to prevent particulate matter from becoming airborne beyond the work site, as specified in the Fugitive Dust Control Plan or other plan as approved by the District. [Regulation. 1.14, section 2.1]
  - (1) Applying and maintaining asphalt, oil, water or suitable chemicals on roads, material stockpiles, and other surfaces which can create airbourne dusts, [Regulation 1.14, section 2.1.2]
  - (2) Installing and using hoods, fans, and fabric filters to enclose and vent the handling of dusty materials; using water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations, [Regulation 1.14, section 2.1.3]
  - (3) Covering at all times, except when loading and unloading, open bodied trucks transporting materials likely to become airborne, [Regulation 1.14, section 2.1.4]
  - (4) Maintaining paved roadways in a clean condition, [Regulation 1.14, section 2.1.6]
  - (5) Removing earth or other material from paved streets which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water. [Regulation 1.14, section 2.1.7]
- v. No person shall cause or permit the discharge of fugitive emissions in excess of 20% opacity. [Regulation 1.14, section 2.3]
- vi. No owner or operator shall cause or permit the discharge of visible fugitive emissions beyond the lot line of the property on which the emissions originate. [Regulation 1.14, section 2.4]
- i. The owner or operator shall operate and maintain the control devices at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice for minimizing emissions. [Regulation 1.05, section 5]

**d. VOC**

- i. The owner or operator shall not allow the plantwide emissions of the pollutant VOC to equal or exceed twenty-five (25) tons per twelve (12) consecutive month period. [Regulation 5.00]

**S2. Monitoring and Record Keeping**

[Regulation 2.17, section 5. 2]

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

**a. CO**

- i. See the NO<sub>x</sub> monitoring and record keeping requirements.
- ii. The owner or operator shall, monthly, maintain records that can be used to calculate, the monthly total and the twelve (12) consecutive month total emissions of the pollutant CO.
  - (1) If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall, monthly, calculate and record the calendar month and twelve (12) consecutive month period; and
  - (2) The owner or operator shall, monthly, calculate and record the plantwide total CO emissions by adding the emissions from the diesel engines above to the natural gas combustion emissions associated with space heating and water heater.
- iii. The owner or operator shall use the Calculation Methodology (Attachment A) when calculating the controlled or uncontrolled plantwide emissions for the pollutant CO, or other methods if approved in writing by the District.

**b. NO<sub>x</sub>**

- i. The owner or operator shall, monthly, maintain records of any change in location of the diesel engines (associated with Crusher 1, Crusher 3, Crusher 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12) or a declaration that no change in location occurred.
- ii. The owner or operator shall, monthly, maintain records that show when the diesel engines are used on site, which engines are used.
- iii. The owner or operator shall, monthly, maintain records of the hours of operation for those engines during each calendar month and the 12 consecutive month period total, if the emission factor in the units of hp-hr are being used to calculate the emissions.

- iv. The owner or operator shall, monthly, maintain records that can be used to calculate, the monthly total and the twelve (12) consecutive month total emissions of the pollutant NO<sub>x</sub>.
  - (1) If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall, monthly, calculate and record the calendar month and twelve (12) consecutive month period; and
  - (2) The owner or operator shall, monthly, calculate and record the plantwide total NO<sub>x</sub> emissions by adding the emissions from the diesel engines above to the natural gas combustion emissions associated with space heating and water heater.
- v. The owner or operator shall use the Calculation Methodology (Attachment A) when calculating the controlled or uncontrolled plantwide emissions for the pollutant NO<sub>x</sub>, or other methods if approved in writing by the District.

**c. PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

- i. The owner or operator shall, monthly, maintain records that show the quantity (in tons) and type of material processed during each calendar month and the 12 consecutive month period total.
- ii. The owner or operator shall, monthly, calculate and record, the monthly total and the twelve (12) consecutive month total emissions of the pollutant PM/PM<sub>10</sub>/PM<sub>2.5</sub>. All totals shall include PM/PM<sub>10</sub>/PM<sub>2.5</sub> emitted during control equipment bypasses.
- iii. The owner or operator shall, monthly, maintain records that can be used to calculate, the monthly total and the twelve (12) consecutive month total emissions of the pollutant PM/PM<sub>10</sub>/PM<sub>2.5</sub> emitted by the diesel engines.
  - (1) If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall, monthly, calculate and record the calendar month and twelve (12) consecutive month period; and
  - (2) The owner or operator shall, monthly, calculate and record the plantwide total PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions by adding the emissions from the diesel engines above to the natural gas combustion emissions associated with space heating and water heater.

- iv. The owner or operator shall use the Calculation Methodology (Attachment A) when calculating the controlled or uncontrolled plantwide emissions for the pollutant PM/PM<sub>10</sub>/PM<sub>2.5</sub>, or other methods if approved in writing by the District.
- v. The owner or operator shall account for the minor PM<sub>10</sub> emissions from Insignificant Activities when totaling the monthly plantwide emissions. Since the emissions are minor the owner or operator may use the potential PM<sub>10</sub> emissions as the monthly emissions. District approved PM<sub>10</sub> PTE for woodworking is 7.17 pound/month. District approved PM<sub>10</sub> PTE for the heaters are 107.67 pounds per month.
- vi. The owner or operator shall, weekly, perform a visual inspection of the structural and mechanical integrity of the water dust suppression system for signs of damage, leakage, corrosion, or other equipment defects and repair as needed.
- vii. The owner or operator shall maintain weekly records that show the following information for each weekly visual inspection:
  - (1) Date of the inspection;
  - (2) Name of the person that performed the inspection;
  - (3) Description of any equipment defects observed including damages, leakage, corrosion, or other defects that would cause a reduction on the control efficiency;
  - (4) Description of any repairs made or replacement of system components; and
  - (5) A description of all corrective actions taken to abate the deviation.
  - (6) If the equipment was not in use during a given week then a negative declaration shall be recorded for that week.

**d. VOC**

- i. See the NO<sub>x</sub> monitoring and record keeping requirements.
- ii. The owner or operator shall, monthly, maintain records that can be used to calculate, the monthly total and the twelve (12) consecutive month total emissions of the pollutant VOC.
  - (1) If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2. Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall, monthly, calculate and record the calendar month and twelve (12) consecutive month period; and

- (2) The owner or operator shall, monthly, calculate and record the plantwide total VOC emissions by adding the emissions from the diesel engines above to the natural gas combustion emissions associated with space heating and water heater.
- iii. The owner or operator shall use the Calculation Methodology (Attachment A) when calculating the controlled or uncontrolled plantwide emissions for the pollutant VOC, or other methods if approved in writing by the District.

**S3. Reporting**

[Regulation 2.17, section 5. 2]

The owner or operator shall report the following information, as required by General Condition 12:

**a. CO**

- i. See the NO<sub>x</sub> reporting requirements.
- ii. If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall report the monthly and the twelve (12) consecutive month period totals of plantwide emissions of the pollutant CO.

**b. NO<sub>x</sub>**

- i. The owner or operator shall report any change in location of the diesel engines (associated with Crusher 1, Crusher 3, Crusher 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2, Conveyor 3, and Conveyor 12) or a declaration that no change in location occurred.
- ii. If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall report the monthly and the twelve (12) consecutive month period totals of plantwide emissions of the pollutant NO<sub>x</sub>.

**c. PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

- i. The owner or operator shall report the monthly and the twelve (12) consecutive month period totals of plantwide emissions of the pollutants PM/PM<sub>10</sub>/PM<sub>2.5</sub>; and

- ii. If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall report the total plantwide emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub> by adding the emissions from the diesel engines to the production processes reported above.
- iii. The owner or operator shall identify all periods in the reporting period when the process was in operation and the wet dust suppression system was offline in weather conditions that would not contribute to control of the fugitive emissions.
- iv. The owner or operator shall report any deviation from the requirement to conduct the weekly visual inspection of the structural and mechanical integrity of the water dust suppression system for signs of damage, leakage, corrosion, or other equipment defects.
- v. If no deviations occur during an annual reporting period, the report shall state a negative declaration.

**d. VOC**

- i. See the NO<sub>x</sub> reporting requirements.
- ii. If any of the diesel engines associated with Crusher 1, Crusher 3, Crushers 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor2, Conveyor 3, and Conveyor 12 are located in one place onsite for more than 12 consecutive months, then for each such diesel engine the owner or operator shall report the monthly and the twelve (12) consecutive month period totals of plantwide emissions of the pollutant VOC.



**Emission Unit U1: Processing and Production Equipment****Applicable Regulations**

<b>FEDERALLY ENFORCEABLE REGULATIONS</b>		
<b>Regulation</b>	<b>Title</b>	<b>Applicable Sections</b>
7.08	Standards of Performance for New Process Operations	3.1.1, 3.1.2
40 CFR Part 60, Subpart A	Standards of Performance for New Stationary Sources -- General Provisions	§60.11
40 CFR Part 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	§60.670, §60.672, §60.674, §60.676

<b>DISTRICT ONLY ENFORCEABLE REGULATIONS</b>		
<b>Regulation</b>	<b>Title</b>	<b>Applicable Sections</b>
7.02	Adoption of Federal New Source Performance Standards	All

**Equipment**

<b>Emission Point</b>	<b>Description</b>	<b>Install Date</b>	<b>Applicable Regulations</b>	<b>Control ID</b>	<b>Release ID</b>
Crusher 1	Hazmag impact crusher, model APSE/31.5Q, capacity of 300 ton/hour with diesel engine and Seco feeder/hopper.	1995	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Crusher 2	Lippmann jaw crusher, capacity of 300 ton/hour with electric motor and Diester feeder/hopper.	2004	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Crusher 3	Hartl Crushtek (#1) impact crusher, model Supertrack, capacity of 500 ton/hour with diesel engine and attached feeder/hopper	2004	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Crusher 4	Hartl Crushtek (#2) impact crusher, model Supertrack, capacity of 500 ton/hour with diesel engine and attached feeder/hopper	2004	7.08, 40 CFR Part 60 Subpart OOO	1	N/A

<b>Emission Point</b>	<b>Description</b>	<b>Install Date</b>	<b>Applicable Regulations</b>	<b>Control ID</b>	<b>Release ID</b>
Crusher 5	Bandit crusher, model 3680, capacity of 100 ton/hour with diesel engine and attached feeder/hopper	2002	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 1	Powerscreen separating screen, capacity of 300 ton/hour with diesel engine and attached feeder/hopper	1995	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 2	Tyler separating screen, capacity of 300 ton/hour with electric motor	1995	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 3	CEC Roadrunner finishing screen, capacity of 300 ton/hour with diesel engine	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 4	Powerscreen finishing screen, capacity of 295 ton/hour with diesel engine	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 5	Grason separating screen, model 7203-P, capacity of 50 ton/hour with electric motor	2002	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Screen 6	The Red screen separating screen, model 7x20, 3-deck, capacity of 300 ton/hour with electric motor	2012	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 1	Turbo Chieftain, conveyor, capacity of 250 ton/hour with diesel engine	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 2	Terex 65-ft. radial stacking conveyor, capacity of 250 ton/hour with diesel engine	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 3	Screen Machine, model TH-80, conveyor, capacity of 300 ton/hour with diesel engine	2014	7.08, 40 CFR Part 60 Subpart OOO	1	N/A

<b>Emission Point</b>	<b>Description</b>	<b>Install Date</b>	<b>Applicable Regulations</b>	<b>Control ID</b>	<b>Release ID</b>
Conveyor 4	Grayson, side discharge conveyor, capacity of 50 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 5	Grayson, side-feed conveyor, capacity of 100 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 6	Grayson, radial stacking conveyor, capacity of 100 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 7	Grayson, radial stacking conveyor, capacity of 250 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 8	Berkshire-Allied, conveyor, capacity of 150 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 9	M-100, conveyor, capacity of 250 ton/hour with electric motor	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 10	Grayson, "Side Discharge Package" conveyor, capacity of 300 ton/hour with electric motor	2014	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 11	Grayson, 75-ft., radial stacking conveyor, capacity of 300 ton/hour with electric motor	2014	7.08, 40 CFR Part 60 Subpart OOO	1	N/A
Conveyor 12	Finley, model 530, conveyor, capacity of 50 ton/hour with diesel engine	1998	7.08, 40 CFR Part 60 Subpart OOO	1	N/A

**Control Devices**

<b>Control ID</b>	<b>Description</b>	<b>Control Efficiency</b>
Control 1	Centrally installed, electrically operated, sprinkler system, 6,000-gallon tank capacity	AP-42 controlled emission factors

**Equipment Not Regulated**

<b>Emission Point</b>	<b>Description</b>	<b>Emission Point</b>	<b>Description</b>
PEG1	Portable Generator (Diesel), Caterpillar, 1150 HP <sup>3</sup>	PEGT1	Diesel fuel tank (500-gallon)
PEG2	Portable Generator (Diesel), 165 HP <sup>3</sup>	PEGT2	Diesel fuel tank (500-gallon)

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<sup>3</sup> Portable Generators are not regulated as stationary sources.

## U1 Specific Conditions

### S1. Standards

[Regulation 2.17, section 5.1]

#### a. Opacity

- i. The owner or operator shall not allow or cause the visible emissions to exceed 15 percent opacity from each crusher.<sup>4</sup>  
[40 CFR 60.672(b), Table 3]
- ii. The owner or operator shall not allow or cause the visible emissions to exceed 7% opacity from Screen 6, Conveyor 10, Conveyor 11, and 12. Opacity shall not exceed 10% from the other equipment associated with this emission unit. [40 CFR 60.672(b), Table 3]
- iii. The owner or operator shall not allow or cause the visible emissions to exceed 10 percent opacity from any other affected facility. Affected facilities include grinding mills, screening operations, bagging operations, bucket elevators, conveyors, storage bins, and enclosed truck or railcar loading station. [40 CFR 60.672(b), Table 3]

#### b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

- i. See Plantwide Requirements.
- ii. The owner or operator shall not allow PM emissions to equal or exceed, based on actual operating hours in calendar day, the following emission standards:<sup>5</sup> [Regulation 7.08, section 3.1.2]

Emission Point ID	Equipment	Design Capacity (ton/hr.)	PM Limit (lb/hr)
Crusher 1	Hazmag impact crusher with diesel engine	300	41.48
Crusher 2	Lippmann jaw crusher	300	41.48
Crusher 3	Hartl Crushtek (#1) impact crusher with diesel engine	500	46.79
Crusher 4	Hartl Crushtek (#2) impact crusher with diesel engine	500	46.79

<sup>4</sup> The requirements of this subpart, 60.672(b), apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.

<sup>5</sup> For emission points listed in this table (crushers, conveyors, feeders/hoppers and screens), it was determined that the source should meet the lb/hr emission standards uncontrolled.

<b>Emission Point ID</b>	<b>Equipment</b>	<b>Design Capacity (ton/hr.)</b>	<b>PM Limit (lb/hr)</b>
Crusher 5	Bandit crusher with diesel engine	100	36.17
Screen 1	Powerscreen separating screen with diesel engine	300	41.48
Screen 2	Tyler separating screen	300	41.48
Screen 3	CEC Roadrunner finishing screen with diesel engine	300	41.48
Screen 4	Powerscreen finishing screen with diesel engine	295	41.40
Screen 5	Grason separating screen	50	32.37
Screen 6	The Red screen separating screen	300	41.48
Conveyor 1	Turbo Chieftain conveyor with diesel engine	250	40.16
Conveyor 2	Terex conveyor with diesel engine	250	40.16
Conveyor 3	Screen Machine conveyor with diesel engine	300	41.48
Conveyor 4	Grayson, side discharge conveyor	50	32.37
Conveyor 5	Grayson, side-feed conveyor	100	36.17
Conveyor 6	Grayson, radial stacking conveyor	100	36.17
Conveyor 7	Grayson, radial stacking conveyor	250	40.15
Conveyor 8	Berkshire-Allied, conveyor	150	37.50
Conveyor 9	M-100, conveyor	250	40.16
Conveyor 10	Grayson, "Side Discharge Package" conveyor	300	41.48
Conveyor 11	Grayson, 75-ft., radial stacking conveyor	300	41.48
Conveyor 12	Finley, model 530, conveyor, capacity of 50 ton/hour with diesel engine	50	32.37

**S2. Monitoring and Record Keeping**

[Regulation 2.17, section 5.2]

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

**a. Opacity**

- i. The owner or operator shall, weekly, conduct a one-minute visible emissions survey, during normal operation, of **all the emission points**. No more than four emission points shall be observed simultaneously.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight (8) hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, weekly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given week, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

**b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

- i. See Plantwide Requirements.
- ii. The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. [40 CFR 60.674(b)]
- iii. The owner or operator shall monthly maintain records of each periodic inspection required under 40 CFR 60.674(b). The records shall include the date of each inspection and any corrective action taken. [40 CFR 60.676(b)(1)]
- iv. For the Bandit crusher (Crusher 5) the owner or operator shall monitor and record when the unit is processing non-metallic minerals.

**S3. Reporting**

[Regulation 2.17, section 5.2]

The owner or operator shall submit annual reports demonstrating compliance with the emission limitations specified in accordance with General Condition 12.

**a. Opacity**

The owner or operator shall report the following information regarding opacity emissions:

- i. The date, time and results of each visible emissions survey conducted that resulted in visible emissions being observed. If no visible emissions were observed during the reporting period, the owner or operator may submit a negative declaration.
- ii. The date, time and results of each Method 9 test conducted. If there were no Method 9 tests performed during the reporting, the owner or operator may submit a negative declaration.
- iii. Description of any corrective action taken for each exceedance of the opacity standard.

**b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

- i. See Plantwide Requirements.
- ii. The owner or operator shall report any deviation from the requirement to conduct the monthly periodic inspection of proper water flow to the discharge sprays nozzles in the wet suppression system.
- iii. If no deviations occur during an annual reporting period, the report shall state a negative declaration.
- iv. The owner or operator shall report any deviation from recording all times when the Bandit crusher (Crusher 5) was processing non-metallic minerals.



**Insignificant Activities**

<b>Equipment Description</b>	<b>Quantity</b>	<b>PTE (tpy)</b>	<b>Regulation Basis</b>
Woodworking: Woodworking table saw, chop saw, saw drill press, electric operated	1	PM <sub>10</sub> = 0.04	Regulation 1.02
Storage: Aggregate storage pile (4000 ton)	1	PM <sub>10</sub> = 0.05	Regulation 1.02
Water heater: natural gas, < 10 MMBtu, direct fire	1	NO <sub>x</sub> = 4.25 PM <sub>10</sub> = 0.02	Regulation 1.02
Area heater: natural gas, < 10 MMBtu/hr., direct fire	1	NO <sub>x</sub> = 4.25 PM <sub>10</sub> = 0.02	Regulation

1. Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
2. Insignificant activities identified in District Regulation 1.02, Appendix A, shall comply with generally applicable requirements.
3. The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15<sup>th</sup>.
4. Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
5. The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
6. The District has determined that no monitoring, recordkeeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

**Emission Unit 1A-1: Processing and Production Equipment not subject to NSPS or MACT**

**Applicable Regulations**

<b>FEDERALLY ENFORCEABLE REGULATIONS</b>		
<b>Regulation</b>	<b>Title</b>	<b>Applicable Sections</b>
1.14	Control of Fugitive Particulate Emissions	All
7.08	Standards of Performance for New Process Operations	3.1.1, 3.1.2

**Equipment**

<b>Emission Point</b>	<b>Description</b>	<b>Install Date</b>	<b>Applicable Regulations</b>	<b>Control ID</b>	<b>Release ID</b>
Woodworking	Woodworking table saw, chop saw, saw drill press, electric motors	unknown	7.08	N/A	N/A
Storage	Aggregate storage pile, capacity of 4000-tons	unknown	1.14	N/A	N/A

**Control Devices**

None

## IA-1 Specific Conditions

### S1. Standards

[Regulation 2.17, section 5. 1]

#### a. Opacity

- i. The owner or operator shall not allow or cause the visible emissions to exceed 20 percent opacity<sup>6</sup>. [Regulation 7.08, section 3.1.1]

#### b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

- i. See Plantwide Requirements.
- ii. The owner or operator shall not allow PM emissions to equal or exceed, 2.34 lb/hr based on actual operating hours in calendar day.<sup>7</sup>  
[Regulation 7.08, section 3.1.2]

### S2. Monitoring and Record Keeping

[Regulation 2.17, section 5.2]

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

#### a. Opacity

- i. There are no Opacity Monitoring or Record Keeping requirements for this equipment.

#### b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

- i. See Plantwide Requirements.

### S3. Reporting

[Regulation 2.17, section 5.2]

#### a. Opacity

- i. There are no Opacity Reporting requirements for this equipment.

#### b. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

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<sup>6</sup> The District has determined that this unit is classified as an Insignificant Activity and as such should not cause any Opacity issues.

<sup>7</sup> For emission points woodworking and Storage, it was determined that the source should meet the lb/hr emission standards uncontrolled.

- i. See Plantwide Requirements.

### Attachment A: Calculation Methodology

The owner or operator shall monthly calculate the PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions based on the material throughput and emission factors from AP-42, Chapter 11 Section 11.19.2 Crushed Stone Processing and Pulverized Mineral Processing Table 11.19-22 shown below, unless another method is approved in writing by the District:

Source (Emission factors in lb./ton)	PM	PM <sub>10</sub> <sup>8</sup>
Tertiary Crushing (uncontrolled) (SCC 3-05-020-03)	0.0054	0.0024
Tertiary Crushing (controlled) (SCC 3-05-020-03)	0.0012	0.00054
Screening (uncontrolled) (SCC 3-05-020-02)	0.025	0.0087
Screening (controlled) (SCC 3-05-020-02)	0.0022	0.00074
Conveyor Transfer Point (uncontrolled) (SCC 3-05-020-06)*	0.003	0.0011
Conveyor Transfer Point (controlled) (SCC 3-05-020-06)*	0.00014	4.6E-5
Aggregate Storage Pile	0.00152	0.00152

\*Use this emission factor for Conveyor (1-12), and Feeder/hopper (1, 2).

Using the above Emission Factors calculating the tons per month PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions is as follows:

$$\begin{aligned}
 PM_{10}: \text{throughput} \left( \frac{\text{tons}}{\text{month}} \right) & \left( \text{Emission Factor} \frac{\text{lb}}{\text{ton}} \right) \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right) \\
 & = \frac{\text{tons}}{\text{month}} \text{ uncontrolled emissions}
 \end{aligned}$$

Source (Emission factors in lb./ft <sup>3</sup> )	PM	PM <sub>10</sub> <sup>9</sup>
Woodworking	0.041	0.041

The PM<sub>10</sub> emissions from Insignificant Activities can be determined when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM<sub>10</sub> emissions as the monthly emissions. District approved PM<sub>10</sub> PTE for woodworking is 7.17 pound/month. District approved PM<sub>10</sub> PTE for the heaters is 107.67 pounds per month.

<sup>8</sup> Assume PM<sub>2.5</sub>=PM<sub>10</sub>

<sup>9</sup> Assume PM<sub>2.5</sub>=PM<sub>10</sub>

### Diesel Engines and Generators

#### PEG1: Portable Generator 1150 HP

Emission Source	Pollutant	Diesel Fuel EF, Output (lb/hp-hr)	Emission Factor Source	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)
PEG1	CO	5.50E-03	AP-42, 3.4-1	1.16E-01
	NO <sub>x</sub>	2.40E-02	AP-42, 3.4-1	4.38E-01
	PM	7.00E-04	AP-42, 3.4-2	1.37E-02
	PM <sub>10</sub>	3.99E-04	AP-42, 3.4-2	7.85E-03
	PM <sub>2.5</sub>	3.99E-04	AP-42, 3.4-2	7.85E-03
	SO <sub>2</sub>	4.05E-04	AP-42, 3.4-1	6.92E-03
	VOC	6.42E-04	AP-42, 3.4-1	1.23E-02

The owner or operator shall calculate the emissions from diesel generators based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

Diesel Gallons x EF Output (lb/gal) = lb pollutant  
 lb pollutant / 2000 lb/ton = tons pollutant

Actual equipment hours operating x EF Output (lb/hp-hr) x equipment hp = lb pollutant  
 lb pollutant / 2000 lb/ton = tons pollutant

Emission Source	Pollutant	Diesel Fuel EF, Output (lb/hp-hr)	Emission Factor Source	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)
PEG1	Benzene (71-43-2)	1.06E-04	AP 42, 3.4-3	1.06E-04
	Toluene (108-88-3)	3.85E-05	AP 42, 3.4-3	3.85E-05
	Xylenes (1330-20-7)	2.64E-05	AP 42, 3.4-3	2.64E-05
	Formaldehyde (50-00-0)	1.08E-05	AP 42, 3.4-3	1.08E-05
	Acetaldehyde (75-07-0)	3.45E-06	AP 42, 3.4-3	3.45E-06
	Acrolein (107-02-8)	1.08E-06	AP 42, 3.4-3	1.08E-06
	Naphthalene (91-20-3)	1.78E-05	AP 42, 3.4-4	1.78E-05
	Benzo(a)anthracene (56-55-3)	8.52E-08	AP 42, 3.3-2	8.52E-08
	Chrysene (218-01-9)	2.10E-07	AP 42, 3.3-2	2.10E-07

Emission Source	Pollutant	Diesel Fuel EF, Output (lb/hp-hr)	Emission Factor Source	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)
	Benzo(b)fluoranthene (205-99-2)	1.52E-07	AP 42, 3.3-2	1.52E-07
	Benzo(k)fluoranthene (207-08-9)	2.99E-08	AP 42, 3.3-2	2.99E-08
	Benzo(a)pyrene (50-32-8)	3.52E-08	AP 42, 3.3-2	3.52E-08
	Indeno(1,2,3-cd)pyrene (193-39-5)	5.6E-08	AP 42, 3.3-2	5.6E-08
	Dibenz(a,h)anthracene (53-70-3)	4.74E-08	AP 42, 3.3-2	4.74E-08

Diesel Gallons x EF Output (lb/gal) = lb pollutant  
 lb pollutant / 2000 lb/ton = tons pollutant

Actual equipment hours operating x EF Output (lb/hp-hr) x equipment hp = lb pollutant  
 lb pollutant / 2000 lb/ton = tons pollutant

**All diesel engines** (associated with **Crusher 1, Crusher 3, Crusher 4, Crusher 5, Screen 1, Screen 3, Screen 4, Conveyor 1, Conveyor 2, Conveyor 3, and Conveyor 12)** and **PEG2** (Portable Generator 165 HP)

Emission Source	Pollutant	Diesel Fuel EF, Output (lb/hp-hr)	Emission Factor Source	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)
See Above	CO	3.10E-02	AP-42, 3.3-1	6.04E-01
	NO <sub>x</sub>	6.68E-03	AP-42, 3.3-1	1.30E-01
	PM	4.05E-04	AP-42, 3.3-1	6.92E-03
	PM <sub>10</sub>	2.20E-03	AP-42, 3.3-1	4.25E-02
	PM <sub>2.5</sub>	2.20E-03	AP-42, 3.3-1	4.25E-02
	SO <sub>2</sub>	2.51E-03	AP-42, 3.3-1	4.93E-02
	VOC	3.10E-02	AP-42, 3.3-1	6.04E-01

The owner or operator shall calculate the emissions from diesel generators based on fuel throughput and emission factors stated in the table above unless another method is approved in writing by the District.

Diesel Gallons x EF Output (lb/gal) = lb pollutant  
 lb pollutant / 2000 lb/ton = tons pollutant

Actual equipment hours operating x EF Output (lb/hp-hr) x equipment hp = lb pollutant

lb pollutant / 2000 lb/ton = tons pollutant

#### Diesel Fuel Combustion HAP/TAC Emission Factors

Emission Source	Pollutant	Diesel Fuel EF, Output (lb/hp-hr)	Emission Factor Source	Diesel Fuel Emission Factor (lb/gallon diesel fuel combusted)
See Above	Benzene (71-43-2)	6.60E-06	AP-42, 3.3-2	1.28E-04
	Toluene (108-88-3)	2.89E-06	AP-42, 3.3-2	5.60E-05
	Xylenes (1330-20-7)	2.01E-06	AP-42, 3.3-2	3.90E-05
	Formaldehyde (50-00-0)	2.76E-07	AP-42, 3.3-2	5.36E-06
	Acetaldehyde (75-07-0)	8.34E-06	AP-42, 3.3-2	1.62E-04
	Acrolein (107-02-8)	5.42E-06	AP-42, 3.3-2	1.05E-04
	Naphthalene (91-20-3)	6.54E-07	AP-42, 3.3-2	1.27E-05
	Benzo(a)anthracene (56-55-3)	6.00E-07	AP-42, 3.3-2	1.16E-05
	Chrysene (218-01-9)	3.58E-08	AP-42, 3.3-2	6.93E-07
	Benzo(b)fluoranthene (205-99-2)	1.00E-08	AP-42, 3.3-2	1.95E-07
	Benzo(k)fluoranthene (207-08-9)	2.06E-07	AP-42, 3.3-2	4.00E-06
	Benzo(a)pyrene (50-32-8)	2.08E-07	AP-42, 3.3-2	4.03E-06
	Indeno(1,2,3-cd)pyrene (193-39-5)	1.32E-08	AP-42, 3.3-2	2.56E-07
	Dibenz(a,h)anthracene (53-70-3)	5.38E-08	AP-42, 3.3-2	1.04E-06

Diesel Gallons x EF Output (lb/gal) = lb pollutant

lb pollutant / 2000 lb/ton = tons pollutant

Actual equipment hours operating x EF Output (lb/hp-hr) x equipment hp = lb pollutant

lb pollutant / 2000 lb/ton = tons pollutant



**IA Water Heater and Area Heater Emission Factors**

Emission Source	Pollutant	Natural Gas Emission Factor (lb/10 <sup>6</sup> scf natural gas combusted)		Emission Factor Source
		Uncontrolled	Controlled	
Water Heater, Area heater	NO <sub>x</sub>	100	100	AP-42, 1.4-1
	CO	84	84	AP-42, 1.4-1
	PM	0.52	0.52	Roy Huntley, EPA <sup>10</sup>
	PM <sub>10</sub>	.032	0.32	Roy Huntley, EPA <sup>10</sup>
	SO <sub>2</sub>	0.6	0.6	AP-42, 1.4-2
	VOC	5.5	5.5	AP-42, 1.4-2
	NH <sub>3</sub>	3.2	3.2	EPA WebFIRE

- 
- $E = (X) * (EF \text{ lb}/10^6 \text{ scf}) * (1 \text{ ton}/2000 \text{ lb.})$
- Where: E = emissions (tons)
- X = the amount of natural gas combusted (10<sup>6</sup> scf)
- [AP-42 EF (lb/MMBtu) converted to (lb/10<sup>6</sup> scf) natural gas combusted]
- 

**IA Water Heater and Area Heater Emission Factors**

Emission Source	Individual HAP/TAC	CAS	Natural Gas Emission Factor (lb/10 <sup>6</sup> scf natural gas combusted)		Emission Factor Source
			Uncontrolled	Controlled	
Water Heater, Area heater	2-Methylnaphthalene	91-57-6	2.40E-05	2.40E-05	AP-42, 1.4-3
	3-Methylchloranthrene	56-49-5	1.80E-06	1.80E-06	AP-42, 1.4-3
	DMBA	57-97-6	1.60E-05	1.60E-05	AP-42, 1.4-3
	Acenaphthene	83-32-9	1.80E-06	1.80E-06	AP-42, 1.4-3
	Acenaphthylene	208-96-8	1.80E-06	1.80E-06	AP-42, 1.4-3

<sup>10</sup> The revised PM emission factors are from: "EPA's Emission Inventory and Analysis Group guidance 3/30/2012".

Emission Source	Individual HAP/TAC	CAS	Natural Gas Emission Factor (lb/10 <sup>6</sup> scf natural gas combusted)		Emission Factor Source
			Uncontrolled	Controlled	
	Anthracene	120-12-7	2.40E-06	2.40E-06	AP-42, 1.4-3
	Benz(a)anthracene	56-55-3	1.80E-06	1.80E-06	AP-42, 1.4-3
	Benzene	71-43-2	2.10E-03	2.10E-03	AP-42, 1.4-3
	Benzo(a)pyrene	50-32-8	1.20E-06	1.20E-06	AP-42, 1.4-3
	Benzo(b)fluoranthene	205-99-2	1.80E-06	1.80E-06	AP-42, 1.4-3
	Benzo(g,h,i)perylene	191-24-2	1.20E-06	1.20E-06	AP-42, 1.4-3
	Benzo(k)fluoranthene	205-82-3	1.80E-06	1.80E-06	AP-42, 1.4-3
	Chrysene	218-01-9	1.80E-06	1.80E-06	AP-42, 1.4-3
	Dibenzo(a,h)anthracene	53-70-3	1.20E-06	1.20E-06	AP-42, 1.4-3
	Dichlorobenzene	25321-22-6	1.20E-03	1.20E-03	AP-42, 1.4-3
	Fluoranthene	206-44-0	3.00E-06	3.00E-06	AP-42, 1.4-3
	Fluorene	86-73-7	2.80E-06	2.80E-06	AP-42, 1.4-3
	Formaldehyde	50-00-0	7.50E-02	7.50E-02	AP-42, 1.4-3
	Hexane	110-54-3	1.80E+00	1.80E+00	AP-42, 1.4-3
	Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	1.80E-06	AP-42, 1.4-3
	Naphthalene	91-20-3	6.10E-04	6.10E-04	AP-42, 1.4-3
	Phenanthrene	85-01-8	1.70E-05	1.70E-05	AP-42, 1.4-3
	Pyrene	129-00-0	5.00E-06	5.00E-06	AP-42, 1.4-3
	Toluene	108-88-3	3.40E-03	3.40E-03	AP-42, 1.4-3
	Arsenic	7440-38-2	2.00E-04	2.00E-04	AP-42, 1.4-4
	Beryllium	7440-41-7	1.20E-05	1.20E-05	AP-42, 1.4-4
	Cadmium	7440-43-9	1.10E-03	1.10E-03	AP-42, 1.4-4

Emission Source	Individual HAP/TAC	CAS	Natural Gas Emission Factor (lb/10 <sup>6</sup> scf natural gas combusted)		Emission Factor Source
			Uncontrolled	Controlled	
	Chromium	7440-47-3	1.40E-03	1.40E-03	AP-42, 1.4-4
	Cobalt	7440-48-4	8.40E-05	8.40E-05	AP-42, 1.4-4
	Manganese	7439-96-5	3.80E-04	3.80E-04	AP-42, 1.4-4
	Mercury	7439-97-6	2.60E-04	2.60E-04	AP-42, 1.4-4
	Nickel	7440-02-0	2.10E-03	2.10E-03	AP-42, 1.4-4
	Selenium	7782-49-2	2.40E-05	2.40E-05	AP-42, 1.4-4

- $E_{(HAP)} = (X) (EF \text{ lb}/10^6 \text{ scf}) (1 \text{ ton}/2000 \text{ lb.})$
- Where:  $E_{(HAP)}$  = emissions (tons)
- X = the amount of natural gas combusted (10<sup>6</sup> scf)
- [AP-42 EF (lb/MMBtu) converted to (lb/10<sup>6</sup> scf) natural gas combusted]